08/874,992 06/12/97 STAMLER

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.

HM31/0708

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EXAMINER	
1654	

07/08/98

ART UNIT	PAPER NUMBER

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary	Application No. 08/874,992	Applicant(s) Stamler et al.
	Examiner Bennett Celsa	Group Art Unit 1654

☐ Responsive to communication(s) filed on _____ .

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *one* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-48* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☐ Claim(s) _____ is/are rejected.

☐ Claim(s) _____ is/are objected to.

☒ Claims *1-48* are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Claims 1-48 are currently pending.

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-3, 8-13, 23 and 24, drawn to methods of treating diseases or disorders (in general) with a nitrosating agent (in general) classified in class 514, subclasses 2, 19, 550 etc depending upon the selected nitrosating agent and disease state.

II. Claims 4-5 and 39, drawn to compositions comprising S-nitrosohemoglobins (in general) classified in class 514, subclass 6+.

III. Claims 6-7 and 14, drawn to a blood substitute comprising nitrosated Hb and the use thereof to deliver NO, classified in class 435, subclass 1.1+.

IV. Claims 15-17, drawn to a therapeutic use of nitrosated/nitrated Hb to prevent/treat disorder relating to platelet adherence or thrombus formation (e.g. clotting), classified in class 514, subclass 822.

V. Claim 18-22, drawn to a composition comprising polynitrosated hemoglobin and methods of making thereof, classified in class 514, subclass 6+.

VI. Claims 25 and 28 drawn to a composition comprising nitrosyl-deoxyhemoglobin and a method of making thereof, classified in class 514, subclass 6+.

VII. Claims 26, 27 and 29 drawn methods of making nitrosyl-oxyhemoglobin (e.g. SNO-Hb), classified in Class 514, subclass 6+.

VIII. Claims 30-32 drawn to a NO donor (e.g. diazeniumdiolates, nitroprusside, nitroglycerine etc.) hemoglobin conjugate and composition classified in class 514, subclass 6+; class 600/320+; class 424/193.1+ , class 530, subclass 350+ and various other subclasses dependent upon choice of NO donor.

IX. Claim 33 drawn to a method for treating/preventing an NO mediated disorder by administering a heme based blood substitute and inhaled NO, classified in class 514, subclass 832 and class 423, subclasses 374 and 405.

X. Claims 34 and 35 drawn to methods of delivering CO using CO-derivatized hemoglobin, classified in class 514, subclass 6+.

XI. Claims 36-38 drawn to an electron acceptor (e.g. NAD, FAD, superoxide dismutase etc.) nitrosylhemoglobin conjugate and composition classified in class 514, subclass 6+, 530, class 350+, class 435, subclass 183+, class 536, subclass 26.24+ and additional classes dependent upon the electron acceptor.

XII. Claims 40, 41 and 45 drawn to methods of assaying nitrosyl (FeII)-Hb in blood, classified in class 435, subclass 2+.

XIII. Claims 42 and 43, drawn to methods of assaying S-nitrosohemoglobin in blood, classified in class 435, subclass 2+.

XIV. Claims 44, 47 and 48 drawn to a method of measuring nitrosyl (FeII)-Hb and S-nitrosohemoglobin in blood and the use thereof to assess oxygen delivery, classified in class 435, subclass 2+.

XV. Claim 46, drawn to a method of assaying nitrosyl (Fe)-Hb in blood, classified in class 435, subclass 2+.

2. The therapeutic methods of Groups I, IV and IX are patentably distinct since the methods are directed to patentably distinct methods with different modes of operation (e.g. clotting v. oxygen metabolism) and/or achieve different objectives and/or encompass patentably distinct disease states and/or utilize patentably distinct compounds (e.g. conjugated v. unconjugated compounds) and/or differ in scope as to require divergent and burdensome searches.

3. The therapeutic methods of Groups I, IV and IX are patentably distinct as compared to the diagnostic methods of Groups XII-XV since the methods are directed to different purposes (e.g. diagnostic v. therapeutic), have different modes of operation (e.g. different steps) and/or utilize different compounds in different methods which achieve totally different objectives

4. The diagnostic methods of groups XII-XV are patentably distinct methods since the methods have different modes of operation (e.g. different steps) and/or, different function and/or utilize different compounds in different methods which have different objectives .

5. The compounds and the methods of making thereof of Groups II, III, V, VI and VIII are patentably distinct, each from the other, since these groups contain patentably distinct compounds (e.g. conjugates v. unconjugated) and/or are capable of separate uses and/or comprise additional components (e.g. blood substitute, conjugates, unconjugated) and/or are capable of separate manufacture and/or use and/or possess different physicochemical or other properties.

6. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification; the manual and computer searches required for the different Groups is different; and because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

ELECTION OF SPECIES

7. The nitrosating agents of Group I; the NO donor of Group VIII; and the electron acceptor of Group XI; are all separately generic to a plurality of disclosed patentably distinct species comprising different structurally distinct compounds (e.g. for NO donors consider organic nitrates, S-nitroso-N-acetyl cysteine: see specification page 8; for Groups VII and X see the respective dependent claims relating therein).

8. Further Group I, encompasses a wide range of patentably distinct diseases and/or disorders including: sickle cell anemia, stroke, brain disease, shock etc due to differences in recognized treatments and/or differences in etiology and/or the requirement for different searches..

Accordingly, upon selection of the Group I invention, applicant must elect *both* a nitrosating agent and a disease for prosecution on the merits.

Upon the selection of the Group VIII or Group XI invention applicant is to elect a specific NO donor or electron acceptor, respectively.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, even though this requirement is traversed.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

9. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(h).

General information regarding further correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Celsa whose telephone number is (703) 305-7556.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang, can be reached at (703) 308-0254.

Any inquiry of a general nature, or relating to the status of this application, should be directed to the Group receptionist whose telephone number is (703) 308-0196.

July 7, 1998

Bennett Celsa

BENNETT CELSA
PATENT EXAMINER